this decision which will produce the final vote by which the Senate will either give or withhold consent to ratification of the proposed treaty.

The issue now is not whether Germany mistrusts the treaty or France mistrusts it more or Communist China most of all.

The issue, now, is not solely the meaning of the treaty for health and human genetics, or for military strategy or for the technology and costs of scientific arms competition.

All these issues and others have been considered in the painstaking interrogation of the past few weeks. Each has its own unique significance. But each is a fragment of the penultimate question and must be so regarded if we are to reach sound decision.

For the question which now confronts us is the one question which is the sum of the many questions. And a rational response to it can only be the sum of the many responses, weighed in the scale of such wisdom and judgment as each of us may possess. The attitude of no single expert or group of experts in or out of Government, no single official or group of officials of this Government, no single scientist or group of scientists can be controlling on this question. The question is for us alone to decide. It is not for any scientist, military leader, cabinet secretary or whatever to decide for us. It remains now for elected Senators to decide for themselves, to confirm or refuse to confirm the judgment of an elected President.

This penultimate question which confronts us is simply stated: Does the proposed treaty serve, on balance, the interests of the people of the United States, when those interests are considered in their totality? Or to put it negatively: Is the proposed treaty, on balance, inimical to the interests of the people of the United States?

If it is inimical, obviously, the President should not have had the treaty signed in the first place and, certainly, the Senate should not now consent to its ratification. But if the treaty passes even a minimal test, if reason tells us that, on balance, the treaty is not inimical to this Nation, then that alone would seem to be sufficient grounds for approving it. For if we mean what we say when we speak of supporting the leadership of the President, irrespective of party, in his great national responsibilities in foreign relations, we must mean, at least, that in matters of this kind, we are inclined to give him the benefit of those vague and residual hesitancies by which each of us in his own way may be possessed.

And may I add, Mr. President, that I do not see how any Senator can vote either for or against this treaty with a sense of absolute assurance. In any major essay in foreign relations there are bound to be—and there should be—hesitancies. They would be there if we debated the proposed treaty or any major issue, a month, a year or a decade.

There were doubts and hesitancies when a Republican Congress voted a Marshall plan under a Democratic President. There were doubts and hesitancies when a Democratic Congress voted a Middle East resolution under a Republican President. The doubts are there year in and year out when Congress considers the foreign aid program. For the simple truth is that there are no certainties, no absolutes in significant matters of foreign relations.

Indeed, were there no doubts on this question of a nuclear test ban that in itself would be cause for the deepest concern. For the absence of any doubt would suggest either a dangerous delusion or an insipid insignificance in the treaty.

The truth is that there are risks in this as in any venture in foreign relations. But I remind the Senate that there are also risks in failing to venture, in standing still in a world which does not stand still for this or any other nation. And at this moment in the world's time, the risks of a paralyzed uncertainty may be far greater than those which might stem from the pursuit of this venture.

Indeed, there is a strong presumption that such must be the case. I say that, Mr. President, because this proposed treaty is no instant fancy, no sudden concoction. We have not arrived in haste at this point of decision. The active pursuit of a treaty to ban nuclear tests began many years ago under the administration of President Eisenhower. The previous administration was not passive and negative in its approach. It sought a treaty in a most active and positive fashion. Indeed, the former Vice President, Mr. Nixon, journeyed to Moscow in 1959 in an effort to further this objective, among others, of U.S. foreign policy. And in a letter dated April 13, 1959, President Eisenhower wrote Mr. Khrushchev that:

> The United States strongly seeks a lasting agreement for the discontinuance of nuclear weapons tests.

Note, Mr. President, the phrase "strongly seeks."

In short, Mr. President, the search for a nuclear test ban treaty was clearly a cardinal element in the foreign policy of the Nation during the second Eisenhower administration. When Mr. Kennedy assumed office, he did not have to continue that search. He could have abandoned it. He could have ignored the efforts of the previous administration. He could have turned his back on the affirmations in favor of a nuclear test ban treaty, as they were contained in the platforms of both parties during the 1960 presidential campaign and upon which Mr. Kennedy and Mr. Nixon stood for office. That is a prerogative of the Presidency, and Mr. Kennedy could have exercised it had he judged, after a full examination of all relevant information, that the policy was detrimental to the interests of the Nation.

But Mr. Kennedy did not so find. On the contrary, he pursued the matter even as Mr. Eisenhower had done before him. And he continued to pursue it in spite of repeated setbacks and frustrations not unlike those undergone by his predecessor, until an agreement was, at last initialed by his distinguished agent, the Under Secretary of State, Mr. Averell Harriman, on July 25, 1963. That agreement, I would note in order to emphasize its nonpartisan nature, is more closely in accord with the concept of a nuclear test ban as it is contained in the Republican Party's presidential platform in 1960 than it is with the similar plank in the Democratic Party's platform.

It is conceivable that one President of the United States may have misjudged the American interest in this highly significant matter, although I do not for a moment suggest that such was the case with President Eisenhower. But I find it most difficult to believe that two Presidents in succession would be guilty of negligence or poor judgment on precisely the same question of national interest. No, Mr. President, there is a strong presumption that a test ban treaty is not only not inimical to the interests of the people of the Nation but also is to their positive advantage.

Further, Mr. President, when members of the Committee on Foreign Relations and the Committee on Armed Services and the Senate members of the Joint Committee on Atomic Energy probe every word, comma, and period of the text of the treaty; when they examine every conceivable implication of the treaty for days on end; when they hear countless relevant witnesses of the executive branch, including the Secretary of State, the Secretary of Defense, the Joint Chiefs, the Chairman of the Atomic Energy Commission, and the Director of the CIA give sober but unmistakable support for this treaty; when the committees summon for testimony not only the advocates of this treaty but also its most articulate and competent opponents—in short, when the treaty is subjected to the most stringent Senate committee scrutiny and the great preponderance of informed testimony is favorable—there is a strong presumption that the treaty is in the positive interests of the United States.

I should like to read an extract from the testimony of the Joint Chiefs of Staff before the combined committees in executive session. This testimony I understand, after checking, has now been cleared. I refer to this extract because of the particular importance which is attached to the defense aspects of the treaty.

Senator MANSFIELD—

Asking a question of General LeMay—

General, did I understand you correctly—you do favor the ratification of this treaty?

General LEMAY. Providing the safeguards are forthcoming.

Senator MANSFIELD. General Wheeler—

Who, of course, is the Chief of Staff of the Army—

Did I understand you in the same sense?

General WHEELER. Yes, sir.

Senator MANSFIELD. Admiral McDonald?

Who, of course, is the Chief of Naval Operations—

Admiral MCDONALD. Yes, sir.

Senator MANSFIELD. General Shoup?

Who, of course, is Commandant of the Marine Corps—

General SHOUP. Definitely.

Senator MANSFIELD. That is all, Mr. Chairman.

And yet, Mr. President, a strong presumption is not enough in a matter of this kind. Each Senator has an individual responsibility to examine this treaty for himself in the light of his own conscience and his own concept of the interests of his State and the Nation.

The Senator from Montana has done so, and he has just returned from reporting to the people whom he represents on his position on this treaty, which will be before the Senate very shortly. And having done so, he is persuaded that the proposed treaty does no violence to but, on the contrary, serves the interests of the people of his State and the Nation.

It serves those interests, immediately and tangibly, in matters of public health as they may involve a resident or a child yet to be born in Montana or in any one of the 50 States. I refer, Mr. President, to the question of radiation which, as an uninvited but ever-present spectator, has haunted these hearings of the past few weeks. To be sure, there may be a lack of certainty among scientists and doctors on the precise effects of manmade radiation on health and the human species. But let there be no mistake about it. There is a minimal concept of the dangers of radiation from which reputable scientific and medical opinion does not depart. It is expressed very clearly in the unanimous report of the United Nations Scientific Committee on the Facts of Atomic Radiation, 17th Session of the General Assembly, 1962. In this report, scientists from 15 nations, including France, the United States, the Soviet Union, the United Kingdom, Sweden, and Canada recorded their unanimous agreement that—

> The exposure of mankind to radiation from increasing numbers of artificial sources including the worldwide contamination of the environment with short- and long-lived radionuclides from weapons tests calls for the closest attention particularly because the effects of any increase in radiation exposure may not be fully manifested for several decades in the case of somatic disease and for many generations in the case of genetic damage. There should be no misunderstanding about the reality of genetic damage from radiation. The Committee therefore emphasizes the need that all forms of unnecessary radiation exposure should be minimized or avoided entirely, particularly when the exposure of large populations is entailed.

Mr. President, so far as I am aware, that statement has not been challenged from a reputable medical or scientific source anywhere in the world. It is a most conservative statement and one must question the sobriety of anyone who would pass off the factor of radiation damage as irrelevant or propagandistic in the consideration of the proposed treaty. It is of central importance. For what the statement says, in effect, is that we do not know precisely how harmful manmade radioactivity is but we are certain that it is not good for human health or for the genetics of the human race. It is not good, in short, for men, women and children—and particularly children—in Montana, Arizona, Ohio, Washington, Nevada, Mississippi, Utah, or Missouri any more than in London, Paris, Moscow, Peiping or Tokyo. What the statement says, in effect, is that radiological technicians in hospitals do not wear heavy protective clothing and dentists do not shelter themselves for the fun of it when they take X-rays. They do so because the stuff of X-rays, as of nuclear bomb tests, is insiduously dangerous. What the statement says, in effect, is that it is highly inadvisable to put even minute quantities of strontium 90 or 89 into milk or to add other radioactive isotopes such as iodine 131 or cesium 137 to bread, as though they were vitamin A, B, C, or D. They are quite the reverse in their effect on human health and on the human species. The statement says, in short: handle manmade radioactivity with extreme care or, preferably, do not handle it at all.

Yet we have been compelling our own people to handle it, as well as the Russian people and others, and the Russians have been compelling their people as well as ours and others to handle it. That has been the consequence of bomb tests because, beyond the radiation released in proximity to a test site, the phenomenon of fallout results in a wide distribution throughout the world from each detonation, wherever it may occur. And radioactivity is both ideologically neutral and wholly indifferent to national boundaries. When carried in the air currents and clouds of the atmosphere it places free peoples, Communist peoples or whatever, all on this planet, in the same radioactive boat.

We will find some scientific voices saying that it is not too bad and very temporary, this thing which has already been done by nuclear bomb tests to the planetary setting in which all human life is lived. We will find some scientific opinion which takes the opposite view, that the genetic damage already done has been very substantial. And we will find many scientists who say so far it is not too bad, but we had better avoid much more. That there are these differences is a reflection not so much of a disagreement on the facts but of a paucity of facts and of differing values which are put on the integrity of the individual human life. Some are more prepared than others, apparently, to sacrifice this integrity on the altar of science for what is regarded as a valid scientific or defense purpose.

In terms of statistics, our own Federal Radiation Council has made some estimates of the human costs of the radioactive byproducts of nuclear bomb tests. The figures which it supplies are exclusive of the effects of the last Russian test series of superbombs in 1962. The Council indicates that all tests in the United States and throughout the world through 1961 could produce in this Nation in this and future generations anywhere up to 15,000 cases of gross physical and mental birth defects and, possibly, up to a maximum of 2,000 leukemia cases and up to a maximum of 700 cases of bone cancer within the next 70 years. Other adverse health effects of these tests, as, for example, those of radioactive iodine 131 to children's thyroids in the vicinity of tests sites in the Mountan States of the West, are strongly suspect. The same is true of cesium 137 which has been delivered in heavy quantities to Eskimos in Alaska as a result of Soviet tests in the Arctic.

Still other ill effects cannot even be guessed at, as, for example, those of carbon 14, which has a radioactive life of several thousand years and may be said, therefore, to have already altered the human environment permanently.

Because of the difficulty in understanding some of these terms, I ask unanimous consent that at this point in my remarks definitions of some of the items which I referred to, as well as others not mentioned, be incorporated in the RECORD.

The PRESIDING OFFICER (Mr. WALTERS in the chair). Is there objection?

There being no objection, the definitions were ordered to be printed in the RECORD, as follows:

DEFINITIONS

Radionuclide is an isotope of an element with radioactive characteristics.

Isotope is an unstable variation of an element.

Strontium 90 is a long-lived radionuclide (half-life 28 years) with chemical properties similar to calcium. (Strontium itself is an alkaline earth-metal element at No. 38.) Strontium 90 tends to deposit in bones, entering the body in the total diet but especially through milk, wheat products, and vegetables.

Strontium 89 is a radionuclide, similar to strontium 90 but has a half-life of only 50 days. It, too, deposits preferentially in bones. Milk is the significant dietary contributor of strontium 89 but it also attaches to the surface of other foods.

Cesium 137 is a long-lived radionuclide (half-life 30 years). (Cesium itself is a soft metallic element at No. 55.) Cesium 137 distributes throughout the soft tissues of the body, with milk, meat and vegetables the main sources. As in the case of strontium 90, dietary measurements of cesium 137 fluctuate in consonance with the fallout rate.

Iodine 131 is a short-lived radionuclide (half-life 8 days). (Iodine itself is a nonmetallic crystalline element at No. 53.) Deposited in the body, iodine 131 concentrates in the thyroid gland. Residence time, as well as half-life, is short. The most significant dietary contributor is milk.

Carbon 14 is a very long-lived radionuclide (half-life 5,760 years). It is similar to nonradioactive carbon and is produced both naturally by cosmic radiation and artificially by bomb tests. The level of carbon 14 in the environment tends to decrease only as it enteres carbonates of the deep ocean waters and sediments. All items of diet contribute to the amount of carbon 14 in the body in proportion to their carbon content.

Tritium is the radioactive isotope of hydrogen (half-life 12.4 years) which is produced both naturally and by fallout. It combines with oxygen to produce radioactive water which goes everywhere ordinary water goes. On July 22, 1963 the Department of Interior announced that tritium had reached the highest concentration in rainwater ever measured by the Geological Survey.

Mr. MANSFIELD. Mr. President, it is all very well to note that the statistical projections suggest only a very small number of Americans as adversely affected by all tests throughout the world through 1961. But it would not be very well to tell that to the specific Americans who will suffer the consequences. Furthermore, it is clear that the Russian test series of 1962 will add to the specific totals of health damage already projected in the United States. It is clear,